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ABSTRACT

Two studies were conducted with normal preschool and retarded children to examine D. El'konin's theory that condensation of play activity occurs when social human relationships are reproduced in role play. Two types of condensation were hypothesized: reduction of repetition in a manipulation or in a small unit of sequential manipulations, and omission of unnecessary kinds of manipulations. Both studies verified El'konin's theory in normal children as well as in a mentally retarded child. Findings suggested the importance of adults in facilitating the first transitional stage of play activity from mere reproduction of adult acts to reproduction of adult social relationship or role. (CL)

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CONDENSATION OF PLAY ACTIVITY IN NORMAL CHILDREN AND A MENTALLY RETARDED CHILD

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Piaget (1945) suggests that symbolic games after four years old involve collective symbolism and differentiation of role, having relation with socialization. After assigning the roles of members, children from 4 to 7 years old enjoy playing symbolic games collectively. This kind of socialized symbolic games is called socio-dramatic play by Smith (1977) and also called role play by Soviet psychologists.

Developmental stages of symbolic play in one-to-three years old have been proposed by several researchers such as Lowe (1975), Nicolich (1977), but developmental studies of socio-dramatic play or role play are very scarce. Soviet developmental psychologists regard role play as the leading activity, i.e. the most important activity for development in preschoolers.

El'konin (1960), a Soviet psychologist, has suggested that condensation of play activity occurs when social human relationships are reproduced in the role play. Condensation is thought to appear if motivation of play is directed to a companion (either a child or an adult) and organizes the sequence of play constituents. Although condensation in a play activity seems to have an important role in the evolution of play, this subject has not yet been studied. In this paper, we examine the emergence of condensation in the course of socialization of symbolic play.

We hypothesize that there be two kinds of condensation; TYPE A condensation is the reduction of repetition in a manipulation or in a small unit of sequential manipulations, e.g. in pretending to cut a carrot, repetition of the same act of cutting is reduced to only one act of

cutting. TYPE B condensation means omission of unnecessary kinds of manipulations, e.g. a child omits the acts of turning on and turning off the switch of a stove from the original sequence of manipulations such as cutting vegetables, putting them into a pan on a stove, turning on the switch of the stove, turning it off, taking the pan off the stove and putting vegetables into a dish.

This paper considers not only play behavior of normal children but also that of handicapped children. Wing et al. (1977) observed that there is a type of autistic children that show sterotyped play behavior, repeating endlessly the same symbolic theme (manipulation). Vygotskaya (1975) indicated that symbolic play in deaf children involves the detailed reproduction of a sequence of pretended manipulations without any reduction nor abbreviation.

In the present paper, we will examine experimentally whether condensation of play occurs or not as a result of adults intervention to facilitate socialization in play. Subjects are not yet fully socialized normal children (Study I) and a mentally retarded child (Study II).

STUDY I

METHOD

Subjects Subjects were eight preschool Japanese non-retarded children, 6 boys and 2 girls, aged 2:10 ∿ 4:4 years. They were all enrolled in a day-care center.

Materials A set of miniature toys for playing house: a chopping board, a pan, a cooking knife, a stove, a stewpot, ricebowls, forks, spoons, dishes; and a piece of clay.

Procedure A subject(s) was made to sit at a table on which the set of toys was arranged. The Experimenter (E) sat at her side. The experiment was consisted of three sessions.

Session I: E instructed S, "Now, please play at housekeeping using these toys.", after showing her how to use the toys. While S was playing, E observed S non-directively, sometimes asking her what she was making.

Session II: When E regarded S as having finished cooking and eating, E asked her, "Please cook a meal for me, too."

Session III. After S had cooked the meal and finished eating with E, E asked S, "The meal you cooked was so delicious that I want you to cook another meal for me." In case S was reluctant to follow the instruction, E repeated the instruction and urged her to cook.

Recording The children's behavior in the sessions was videotaped, and also described in free form by two trained observers. All the sessions were transcribed and analysed. Table 1 shows those kinds of manipulations which were necessary for the cooking process and were commonly adopted by children.

RESULTS AND DISCUSSION

Figs. 1∿8 indicate the frequency of acts of each subject according to the different kinds of manipulations. The seven subjects (Figs. 1∿7) who cooked and served meals for E according to E's instruction are defined as socialized players, while the one subject (Fig. 8: Kt) who played only by himself without considering E's intervention is defined as a non-socialized player.

We will not mention the comparison of session II with session I, because in session II children omitted the whole process of pretended cooking and gave the already cooked food directly to E, for the instruction ("Please cook a meal for me, too.") was announced just after the children had finished cooking.

Among socialized players, several manipulations are more reduced in session III compared with session I. We tested the statistical significance of reduction of frequency of each manipulation, i.e. TYPE A condensation by the method of sign test. Socialized children significantly reduced the frequency in manipulations of PICKUP, CUT, INPAN, IGNITE (each $p < .05$). However the non-socialized child didn't reduce the frequency in any manipulations.

The reduction of play activity appeared not in the non-socialized players but in the socialized players. El'konin's hypothesis was

verified in terms of TYPE A condensation. Some of the children in Study I showed TYPE B condensation, which will mainly be analysed in Study II. In further studies, the control group of non-socialized symbolic player should be established in sufficient numbers.

STUDY II

METHOD

Subject Our subject was a mentally retarded child (5:9 in CA : 3:7 in MA by Tanaka-Binet Test of Intelligence) who was receiving integrated education in a public day-care center in Sendai city. He was diagnosed as mentally retarded with autistic disorders by a psychiatrist. He had stereotyped speech and speech irrelevant to the situation, especially when his requests were rejected, he repeats irrelevant utterances. For example when his request to go out was refused, he repeatedly asked for milk, although he did not actually want milk. He usually played alone by getting on a swing or riding a tricycle because of his difficulty in having interaction with other normal children.

Materials Real kitchen utensils in his home; a pan, cups, spoons, a lid of the pan, a gas-range and so forth.

Procedure The experiment was done in the kitchen of his house. The experiment was always initiated by his saying, "I want to play with the pan." As soon as saying so, he went to the kitchen unit, put water into the pan, put the pan on a gas stove, and pretended to ignite the stove symbolically. The experiment consists of six sessions (PLAY 1 ∿ 6), one session in a week successively. In PLAY 1 and 2 there was no intervention from E. In PLAY 3, 4, 5, and 6, E intervented S's play to facilitate socialization of his play, by sitting at the table and asking him to make a meal soon for E.

Recording The protocol description was made from notes systematically taken by two observers and from taperecorded cassette tapes.

RESULTS

Table 2 indicates the sorts of manipulations used in S's symbolic play. These manipulations were executed in the process of pretending cooking. Figures 9∿14 indicate the order of appearance of each manipulation in each PLAY.

Figures 9∿14 show the following points.

1. First of all, let us examine this order up till the act of serving the meal. In PLAY 1 (between 1st and 22th manipulations), a unit of manipulations of pouring water from a cup to a pan (POUR(C→P)), stirring water in a pan (STIR), and casting away the water in the pan into the sink (×) was repeated. In PLAY 2 (between 1st and 15th manipulations), the sequence of a set of manipulations, such as pouring water into a pan (POUR(T→P)), stirring it (STIR), putting the lid onto the pan (LIDON), taking it off the pan (LIDOFF), and transferring the water into a cup (DISH) was repeated. After PLAY 3, these repetitions diminished, i.e. TYPE A condensation emerged.

2. The appearance of TYPE B condensation in PLAY 2 can be demonstrated by looking at those manipulations after the appearance of the manipulation of carrying a cup onto the table (SERVE). That is, omissions of the in-between manipulations, such as IGNITE, LIDON, LIDOFF, were observed between 22nd and 25th manipulations. From PLAY 3 distinctive omissions appeared and developed extremely in PLAY 6.

DISCUSSION

TYPE A condensation (reduction of repetition of a small sequence of manipulations) appeared in and after PLAY 3 where E began to intervene to facilitate the socialization of S's symbolic play. In accordance with Study I, El'konin's hypothesis is re-verified here.

TYPE B condensation (omission of manipulation) first appeared between 22nd and 25th manipulations, that is, after he first carried the cup of water onto the table (21st manipulation) he only did POUR(T→P) and DISH and omitted other manipulations before the second serving (25th

manipulation).

In PLAY 6 the play was so condensed that the whole play was simplified. This is thought to be the result of the transition of S's motivation of play to only give the meal to E. Condensation of play is important for child development only when accompanied by the evolution of play activity. As the intervention to facilitate socialization in the experiment was limited to ask S to make a meal for E, further study must include those interventions which offer a more interpersonally and socially developed theme.

In summary, the hypothesis that the condensation in play activity occurs when symbolic play becomes socialized was verified in Study II in terms of both TYPE A and TYPE B condensations.

GENERAL DISCUSSION

Condensation of play superficially resembles simplification and can be seen as a U-turn phenomenon in view of complexity of play structure. In view of deferred imitation as one of symbolic functions, condensation means loss of detailed realistic reproduction of model behavior. Or more generally, it can be taken as a loss of manipulative-imitative skill or a quantitative decrease of behavioral repertory.

However, from a different point of view, that is, in view of children's motivation of play, condensation means not simplification but elaboration of play motivation, where manipulative-objective motivation is integrated to interpersonal-social motivation by introducing human relationship to the pretending act. The establishment of this integration was initiated and facilitated by adult's intervention.

We would like to point out two important aspects of children's play activity and its development.

First, we can infer developmental stages of symbolic play. Imitative acts are not only manifestation of symbolic function, but also reflect children's experiences of interpersonal relations. Strictly speaking, "unsocialized" symbolic play is not good terminology, because imitation or symbolic play is by itself a result of integration of

cognitive function and social function.

However, the distinction between "unsocialized" and "socialized" symbolic play in this paper is important in a higher dimension in the course of children's development, because it is this distinction that indicates the developmental transition of play activity from the mere reproduction of adult's acts to the reproduction of adult's social relationship or role. This first transition is the prerequisite to the next stage of play activity, that is, children's role play where children mutually assign and play roles by themselves. If we use the terms proposed by Vygotsky (1966), we can say that the second transition is executed from the level of inter-mental function — children cannot initiate social role in symbolic play but can follow adult's intervention — to the level of intra-mental function — each child can initiate taking a role mutually in children's group (role play by children themselves.)

The second important point is the important role of adults for the first transitional stage — about three or four years old in normal children. We insist that the role of adult's intervention in play behavior is crucial for mentally retarded children who have inability in positive social contact. As we have discussed in Study II, therapists are required to engage not in facilitating development of children's skill of various items but in creating and establishing the aim in socially-motivated play.

Finally, we would like to make a brief statement on methodological problem in the psychological studies of play, social interaction, and human molar activities in general. As we have pointed out, there occurs a paradoxical phenomenon, i.e. surface regression of levels of formal skills actually accompanies the progress of children's play behavior and development. To study human activities, such as children's play, the crucial factor is the analysis of structure and its change of motivation. Therefore the instructive experiment of influencing or directing the structure of subjects' motivation seems to be the most direct and most fruitful way to clarify the dynamic structure of human activities.

SUMMARY

In order to test El'konin's hypothesis that condensation of play activity occurs when symbolic play is socialized, two experiments are conducted by intervening in the play of preschoolers and a mentally retarded child to facilitate the socialization of the children's play activity. Both experiments verified El'konin's hypothesis in normal children and the mentally retarded child. Two types of condensation, that is, reduction of repetition and omission of manipulations are demonstrated.

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Table 1 Major kinds of pretended manipulations in Study I

KIND	CONTENT
PICKUP	Pick up a piece of food.
CUT	Cut a piece of food.
INDISH	Put food in a rice bowl or a dish.
INPAN	Put food in a pan or a stewpot.
LIDON	Put the lid on a stewpot.
ONSTOVE	Put a pan (or a pot) on a stove.
IGNITE	Turn on the switch of a stove.
OFFSTOVE	Take a pan (or a pot) off the stove.
LIDOFF	Take the lid off the pot.
DISH	Put food from the pot (or the pan) on a rice bowl or a dish.
EAT	Eat the meal.
SERVE	Serve E the meal.

Table 2 Major kinds of pretended manipulations in Study II

KIND	CONTENT
POUR(T→C)	Pour water from a tap into a cup.
POUR(C→C)	Pour water from a cup into another cup.
POUR(T→P)	Pour water from a tap into a pan.
POUR(C→P)	Pour water from a cup into a pan.
STIR	Stir water in a pan.
EGG	Pretend to crack an egg into a pan.
IGNITE	Pretend to ignite a gas stove.
LIDON	Put the lid onto a pan.
LIDOFF	Take the lid off a pan.
DISH	Pour water from a pan to a cup.
SERVE	Carry a cup to the table.
×	Throw away water into the sink.

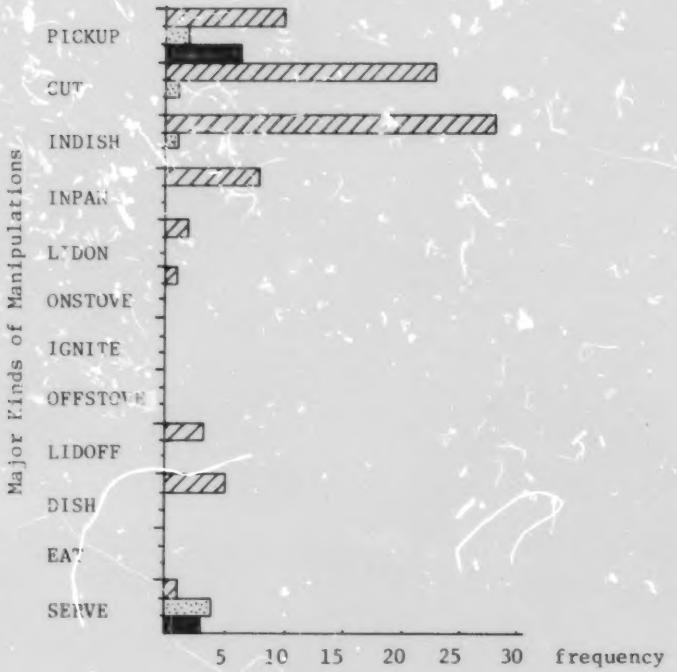

Fig. 1 Er; The Frequency of Each Kind of Manipulation

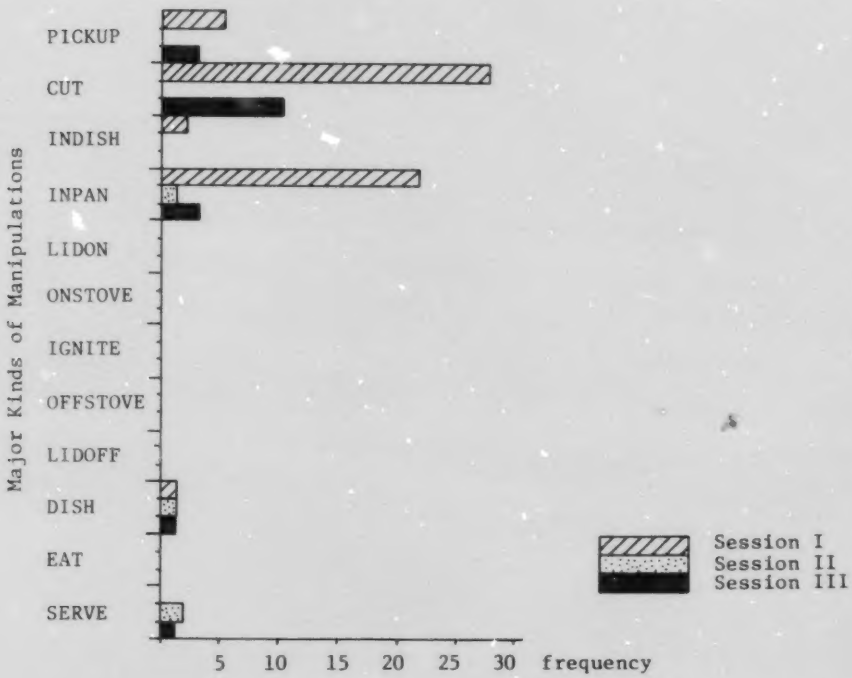

Fig. 2 A; The Frequency of Each Kind of Manipulation

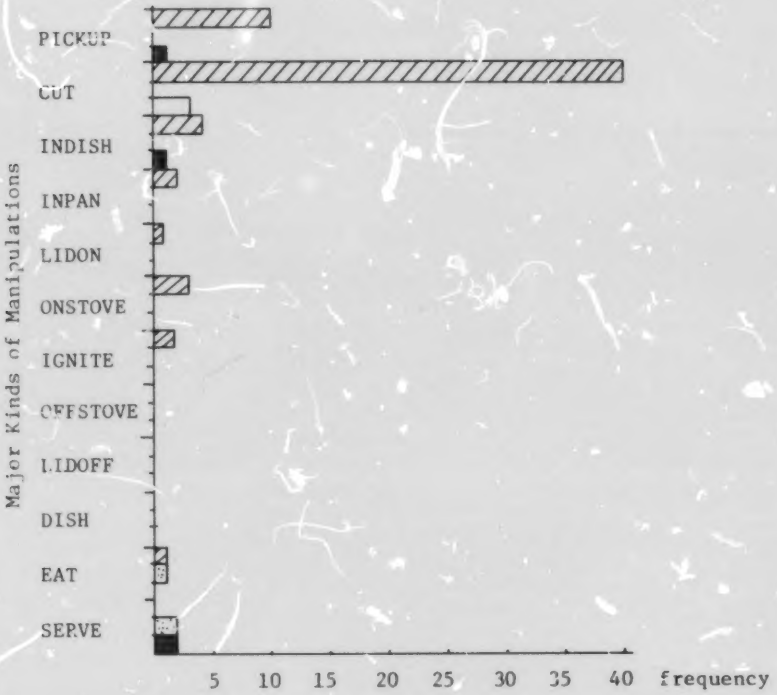

Fig. 3 Ko; The Frequency of Each Kind of Manipulation

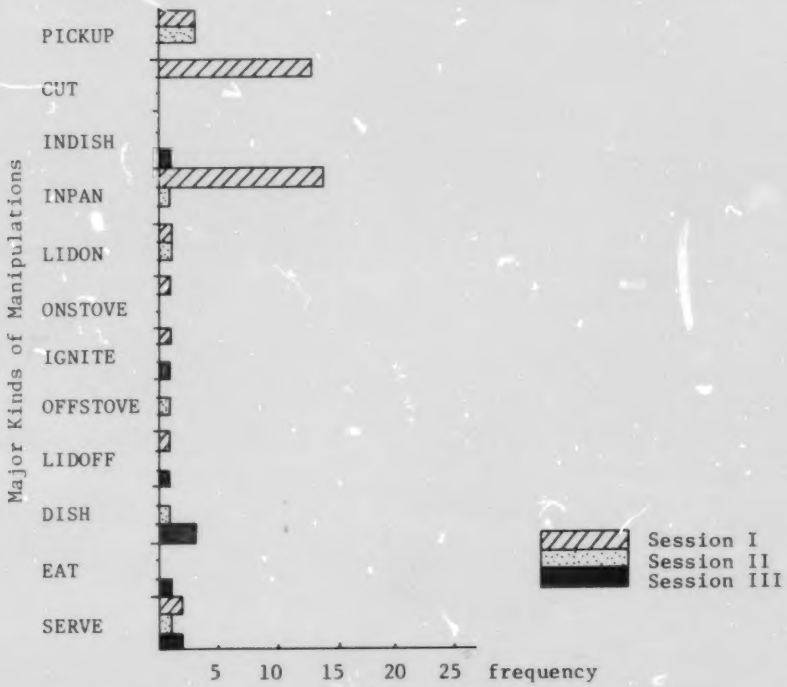

Fig. 4 Sa; The Frequency of Each Kind of Manipulation

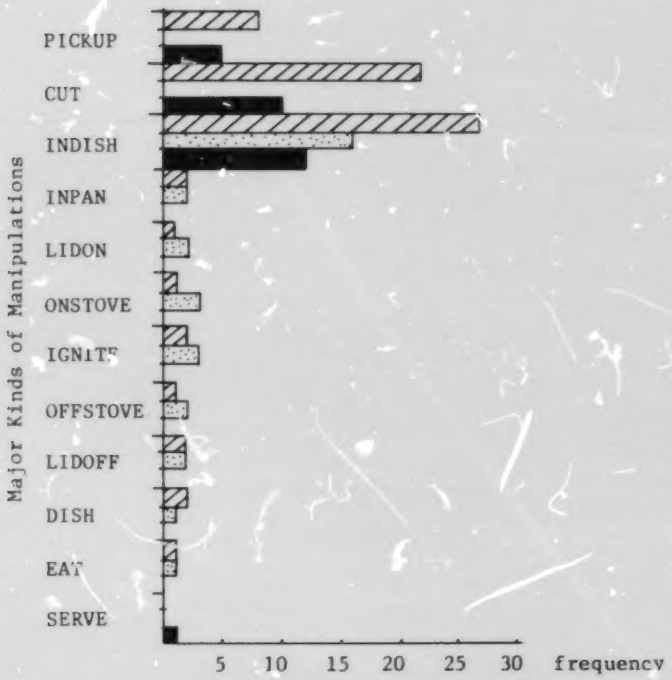

Fig. 5 D; The Frequency of Each Kind of Manipulation

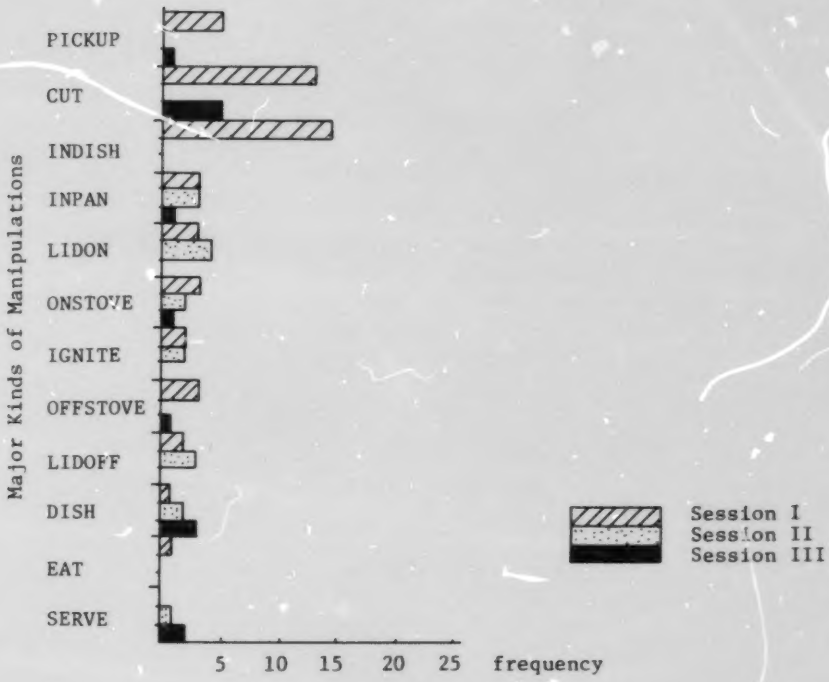

Fig. 6 Kh; The frequency of Each Kind of Manipulation

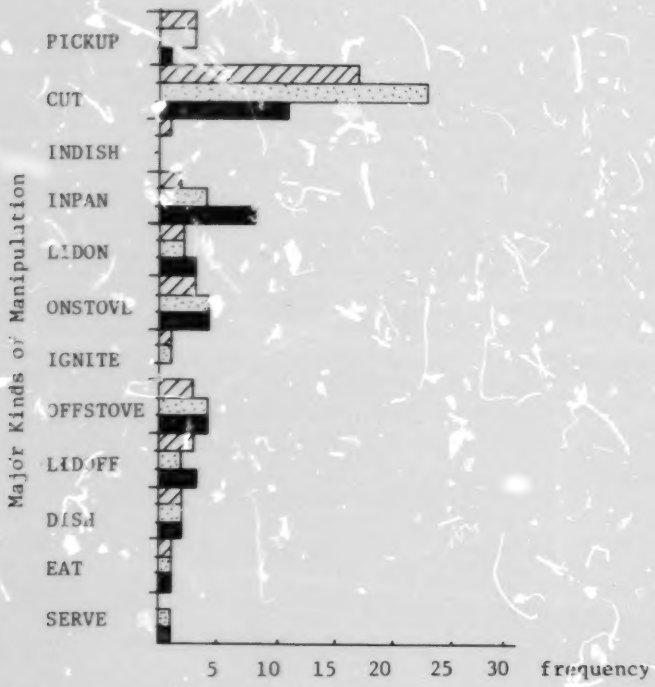

Fig. 7 Hi; The Frequency of Each Kind of Manipulation

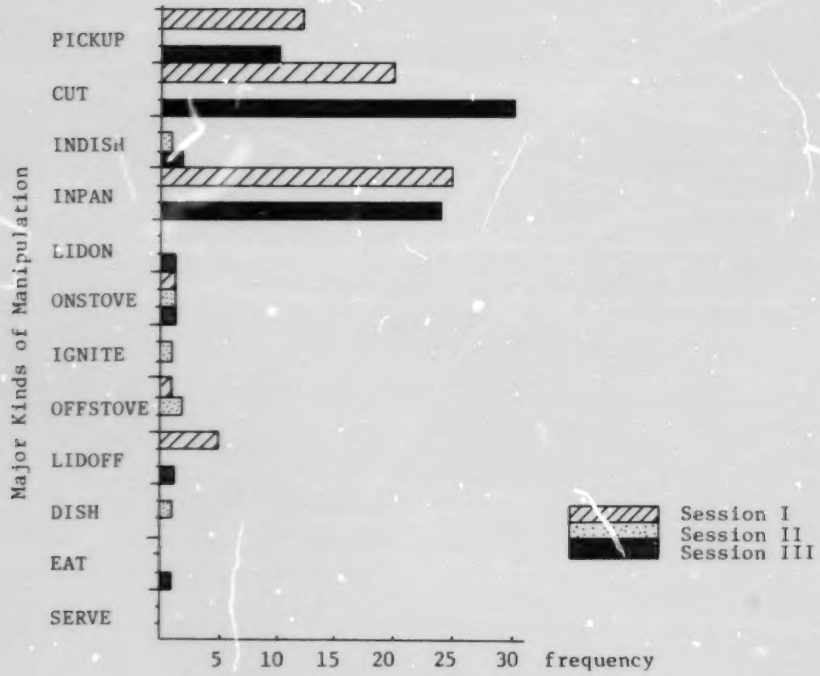

Fig. 8 Kt; The Frequency of Each Kind of Manipulation

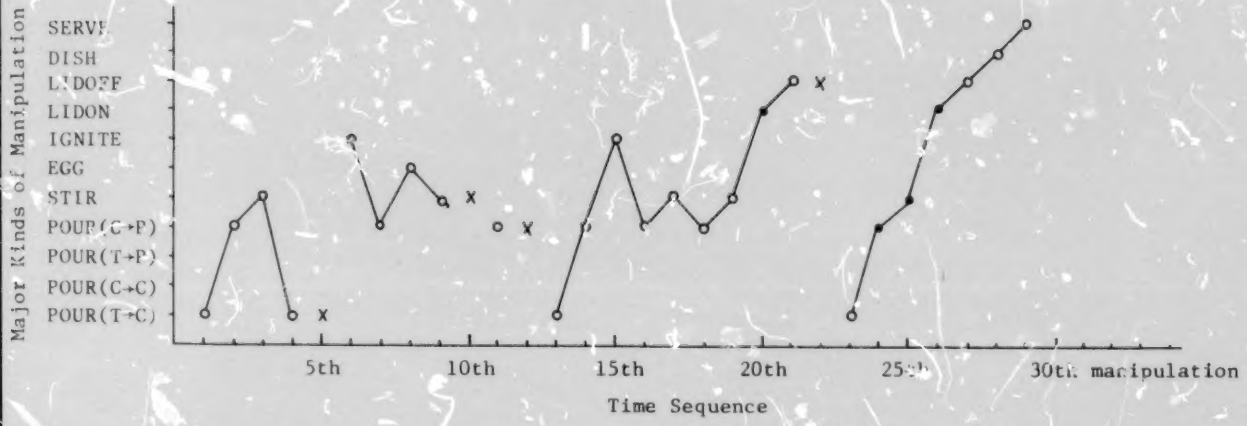

Fig. 9 PLAY 1; The Order of Appearance of Each Manipulation

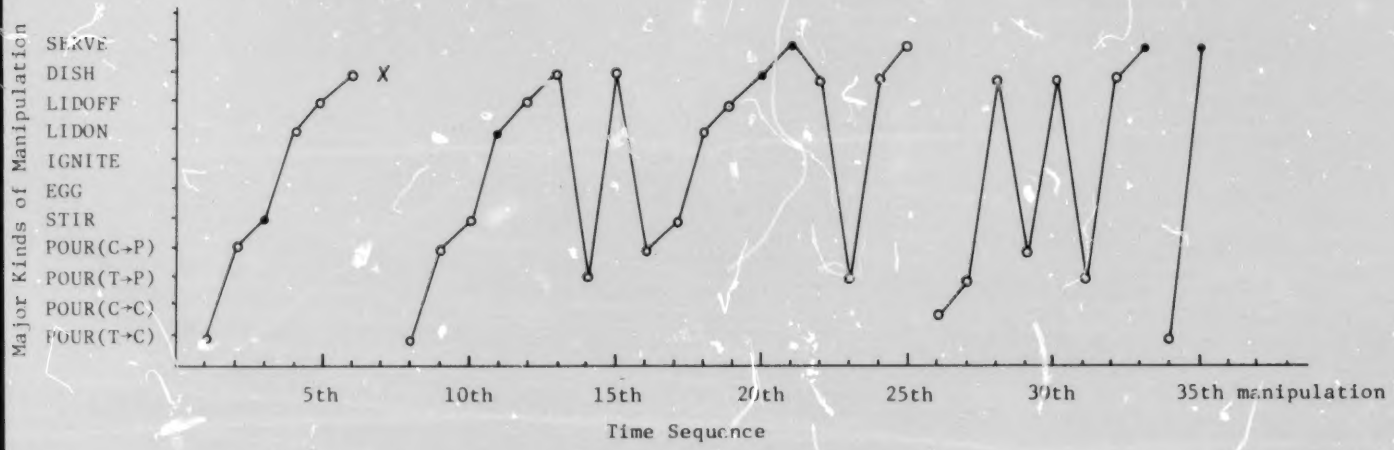

Fig. 10 PLAY 2; The Order of Appearance of Each Manipulation

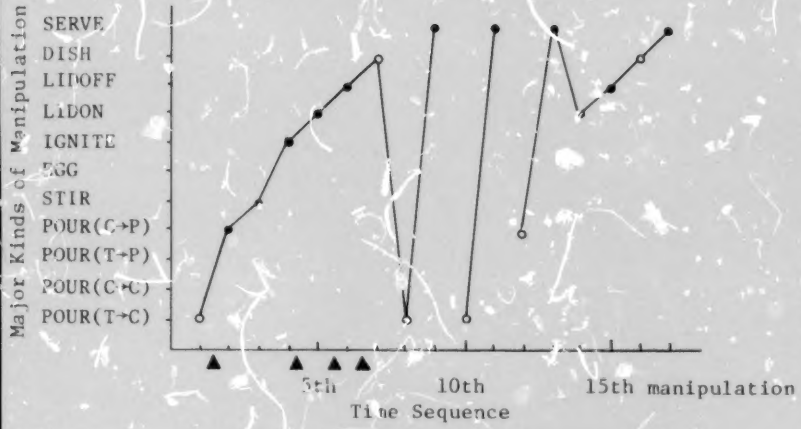

Fig. 11 PLAY 3; The Order of Appearance of Each Manipulation

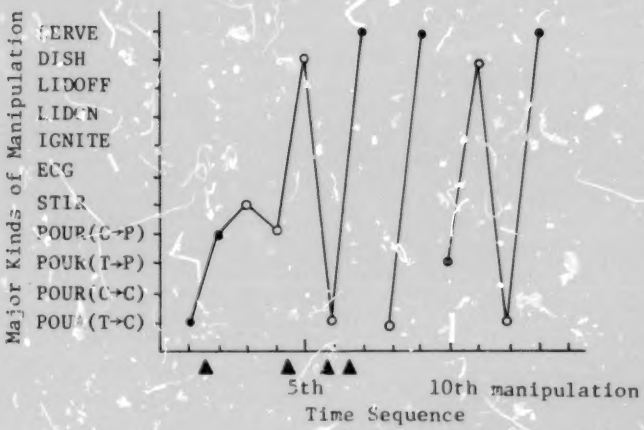

Fig. 12 PLAY 4, The Order of Appearance of Each Manipulation

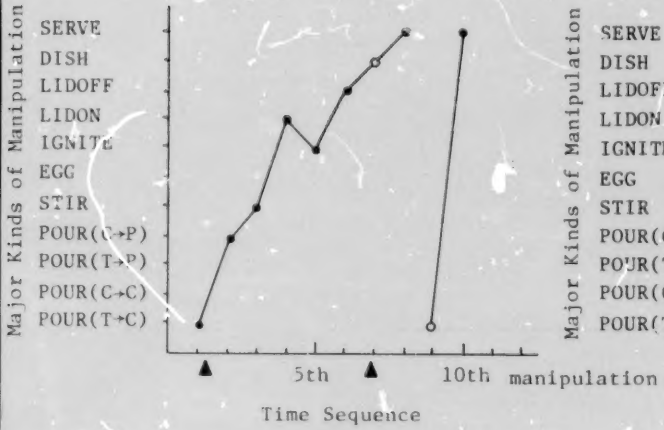

Fig. 13 PLAY 5; The Order of Appearance of Each Manipulation

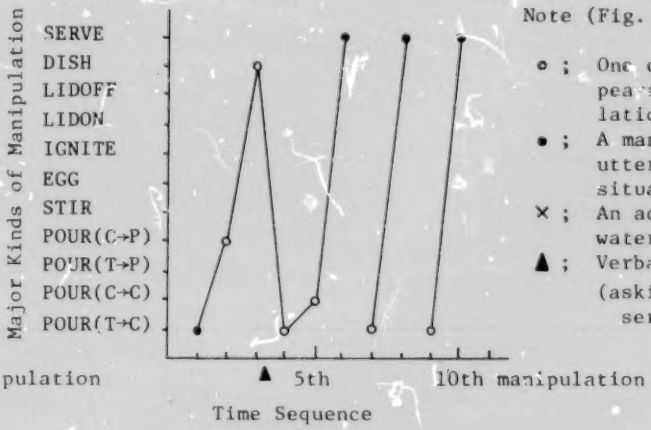

Fig. 14 PLAY 6; The Order of Appearance of Each Manipulation

Note (Fig. 9 ~ Fig. 14)

- ⊙ ; One or more than one appearances of the manipulation
- ● ; A manipulation with S's utterance appropriate situation
- × ; An act of throwing away water into the sink
- ▲ ; Verbal instruction by E (asking S to cook and serve a meal to E)